

**REMARKS**

Claims 1-5 and 7-32 are pending. No claims are currently canceled. No claims have been withdrawn from consideration. Claims 1, 4, 9, and 18-20 are currently amended. No claims have been added. Reconsideration of the application is requested. Basis for the amendments to claim 1, 9 and 20 may be found at page 6, line 29. Basis for further amendments of claim 1 may be found on page 8, lines 10-15. Claims 4 and 19 are amended as suggested by the Examiner. Basis for the amendment to claim 18 may be found on page 5, lines 18-20.

Applicant's Agent thanks Examiner Silverman and S.P.E. Woodward for discussing the outstanding rejections and proposed amendments by telephone on May 1, 2007. No agreement was reached, but Examiner Silverman agreed to give the arguments and amendments further consideration.

**§ 112 Rejections**

Claims 4, 18, 19 and 32 stand rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants as the invention.

Claims 4 and 19 are rejected for Applicant's recitation of the term "residual". Claims 4 and 8 have been amended to recite "residual monomer and solvent" as suggested by the Examiner. Withdrawal of the rejection is respectfully requested.

Claim 18, as amended, recites the limitation "partially cured" instead of partially converted. Claim 18 is further amended to delete the word "coatable" for clarity. One skilled in the art would recognize that the initial composition has a very low viscosity. By partially curing the viscosity is increased to the recited range, rendering it more suitable for coating. One skilled in the art will further realize that by "partially curing" the composition, some ethylenically unsaturated groups of components a) and b) remain unreacted to allow the composition to be coated, then further cured or crosslinked (by further exposure to UV) to the fully cured or crosslinked composition. Applicants respectfully request withdrawal of the rejection of claim 18.

Claim 32 stands rejected for Applicant's use of the phrase "derived from". The rejection is traversed, and an explanation was provided during the interview.

Claim <sup>32</sup> is directed to Applicant's "indirect method" of providing a pendent free-radically polymerizable functional group to the oligomer of claim 1. Using Applicant's "direct method" described from page 9, line 26 to page 10, line 25, a polyethylenically unsaturated monomer is directly incorporated into the oligomer. The multiple ethylenically unsaturated groups are preferably of unequal reactivity, so that one group is polymerized into the oligomer, while a second is not polymerized and is then pendent from the oligomer. Applicants have found it beneficial to use the "indirect method" whereby an oligomer having pendent nucleophilic or electrophilic functional groups is further functionalized to provide the requisite free-radically polymerizable functional group.

Applicants describe the "indirect method" from page 10, line 26 to page 12, line 12. As an example, 2-hydroxyethyl acrylate may be incorporated into the oligomer, to yield pendent hydroxy groups. These hydroxy groups may be functionalized with isocyanatoethyl acrylate to provide the requisite pendent free-radically polymerizable groups. Claim 32 recites the nucleophilic or electrophilic monomer that is incorporated into the oligomer, and the recited "pendent ethylenically unsaturated, free radically polymerizable groups" are *derived therefrom* by Applicant's "indirect method".

Withdrawal of the rejection of claim 32 is solicited.

#### **Double Patenting Rejections**

Claims 1-5 and 7-34 are provisionally rejected on the grounds of nonstatutory obviousness type double patenting over claims 1-45 of copending application 10/732,715. The reference has published as U.S. 2005/0131148.

In response, enclosed is a "Terminal Disclaimer Under 37 C.F.R. Section 1.321(b)," which disclaims the portion of the term of any patent granted on the instant application that would extend beyond the expiration date of the term of U.S. 10/732,715. The Disclaimer also indicates that 3M Innovative Properties Company commonly owns the instant application and U.S. 10/732,715 by virtue of assignments recorded at Reel 015047, Frame 0177, on March 2, 2004 for the instant application, and at Reel 14800, Frame 77/80 on December 10, 2003 for

10/732,715. The Disclaimer further indicates that the chain of title of the instant application has been examined in order to comply with 37 C.F.R. Section 3.73(b).

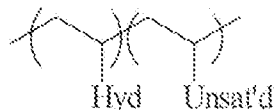
Since under 37 C.F.R. Section 1.78(d) a terminal disclaimer in compliance with 37 C.F.R. Section 1.321(b) can be used to overcome a non-statutory double patenting rejection, Applicants respectfully request that the double patenting rejection be withdrawn.

### **§ 102 Rejections**

Claims 1-5 and 7-32 stand rejected under 35 USC § 102(a) or 102(e) as being anticipated by WO 2003/086492. The rejection is traversed. Applicants note that the reference is equivalent to U.S. 7,005,143 (Abuelyaman et al.), to which remarks and arguments are addressed.

In the previous Reponse, and during the interview of May 1<sup>st</sup>, Applicant's Agent argued that Abuelyamen is directed to a macromer having a poly(oxyalkylene) backbone, as opposed to the carbon-carbon backbone resulting from the polymerization of the monomers recited in claim 1, part a).

Applicants have previously presented, for the purposes of illustration, that the first component oligomer of claim 1 may be depicted as follows, where A is a pendent hydrophilic group, and B is a ethylenically unsaturated free-radically polymerizable group. The repeat units of the polymers are derived from free radical polymerization of ethylenically unsaturated monomers (such as acrylates), bearing the requisite pendent units "Hyd" for the hydrophilic group and "Unsat'd" for the ethylenically unsaturated group. For example, the repeat unit bearing the hydrophilic "Hyd" group is derived from the monomers of the formula on page 10, lines 7 to 22, and the monomers bearing the ethylenically unsaturated "Unsat'd" group are described from page 9, line 19, to page 12, line 13. The word "pendent" is used in the conventional sense of hanging down or dangling from the oligomeric backbone.



Note that Applicant's Agent has used difference descriptors of the hydrophilic and unsaturated groups to avoid needless confusion with the formula on page 12, line 1 and in claim 32. Previously Applicant's Agent used "A" and "B" to identify these pendent groups. As previously

explained, these hydrophilic and unsaturated groups may be introduced to the oligomer using either the direct or indirect methods of functionalization.

In the Office Action dated 04/12/2007, the Examiner acknowledges Applicant's argument that Abuelyamen et al. do not teach an oligomer having a carbon-carbon backbone, but argues that "the claims do not require that the oligomers recited therein be made from olefins, while those in the art have a poly(oxyalkylene) backbone. This is not persuasive because the claims do not require that the oligomers recited therein be made from olefinic monomers...".

As amended herein, the limitation of "ethylenically unsaturated" has been introduced to claim 1 to further clarify the structure of the oligomer as having a carbon-carbon backbone. Claim 1 has been further amended to recite the structure of the "monomer units having pendent hydrophilic poly(alkylene oxide) groups" to distinguish it from the macromonomer and/or the crosslinking agent of the Abuelyamen reference.

During the telephone interview, Examiner Silverman queried whether Abuelyamen would inherently provide the oligomer of claim 1 after polymerization of just a few monomer units.

As previously argued, the macromonomer of the reference is described as having "more than one reactive group that is free radically polymerizable..", and is illustrated (at several places) as of the formula  $XO-(CHR^1-CH_2-O)_m-(CH_2-CH_2-O)_n-Y$ , where X and Y are the polymerizable groups. These polymerizable groups are depicted in column 4, 5 and 8. If copolymerized with any of the optional monomers described above, as described in reference column 10, lines 1-12, it would be clear to one skilled in the art that all the polymerizable groups would be consumed in the polymerization, resulting in a highly crosslinked composition, without the unreacted pendent ethylenically unsaturated groups required of claim 1. It is precisely because all the "X" and "Y" groups of the Abuelyamen macromonomer are consumed that Applicant's prefer to use the "indirect method" of functionalizing the extant oligomer.

Further, a rejection based on inherency is not appropriate. M.P.E.P. 2112 requires : " [t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is

not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Abuelyamen et al. do not teach that the reference polymerized composition would have a carbon-carbon backbone, it is not necessarily present, and would not be recognized as present by one skilled in the art. As the macromonomers and crosslinking agents of the reference have at least two polymerizable groups, partial polymerization of macromonomer and crosslinking agent of Abuelyamen et al. would not yield Applicant's oligomer as recited in claim 1.

The rejection of claims 1-5 and 7-32 under 35 USC § 102(a) or 102(e) as being anticipated by WO 2003/086492 has been overcome and should be withdrawn.

In view of the above, it is submitted that the application is in condition for allowance. Examination and reconsideration of the application as amended is requested. Applicant's Agent is available for a telephone interview to discuss this response and further advance prosecution.

Respectfully submitted,

Date

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By:

Kent S. Kokko, Reg. No.: 33,931  
Telephone No.: 651-733-3597

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
Facsimile No.: 651-736-3833